Lipid Research

GW25-e0429

Association between MLXIPL, BUD13 and ZNF259 gene polymorphisms and serum lipid levels in the Mulao and Han populations

Yin Rui-Xing, Lynn Htet, Htet Aung, Wang Wei
Department of Cardiology, Institute of Cardiovascular Diseases, the First Affiliated Hospital, Guangxi Medical University, Nanning 530021, China

Objectives: The association of single nucleotide polymorphisms (SNPs) in the MLX interacting protein-like (MLXIPL), BUD13 homolog (BUD13) and zinc finger protein 259 (ZNF259) genes is inconsistent in diverse racial/ethnic groups. The present study was undertaken to detect the association of the MLXIPL (rs35332062 A358V, rs3812316 Q241H, rs13235543 P342P and rs799161 g.11092833T>C), BUD13 (rs10790162 +1741T>C, rs17119975 -575A>G and rs11556024 *147C>T) and ZNF259 (rs2075290 -336G>A and rs964184 +359C>G) SNPs and serum lipid levels in the Guangxi Mulao and Han populations.
Methods: A total of 825 subjects of Mulao and 781 participants of Han Chinese were randomly selected from our previous stratified randomized samples. Genotyping of 9 SNPs was performed by polymerase chain reaction and restriction fragment length polymorphism combined with gel electrophoresis, and then confirmed by direct sequencing.
Results: The genotype and allele frequencies of ZNF259 rs2075290 and rs964184 and BUD13 rs10790162 were different between the Mulao and Han populations ($P<0.001$). The SNPs of ZNF259 rs2075290 and rs964184, BUD13 rs10790162, and MLXIPL rs3812316 and rs13235543 were associated with serum triglyceride (TG); ZNF259 rs2075290 and BUD13 rs10790162 with total cholesterol; and MLXIPL rs35332062 with apolipoprotein (Apo) A1 in the Mulao population ($P<0.006$). The SNPs of ZNF259 rs2075290 and BUD13 rs10790162 were associated with serum TG, and ZNF259 rs2075290 with ApoA1/ApoB ratio in the Han population ($P<0.006$). Significant linkage disequilibrium was noted between ZNF259 rs2075290 and rs964184, ZNF259 rs2075290 and BUD13 rs10790162, ZNF259 rs964184 and BUD13 rs10790162, and MLXIPL rs3812316 and rs13235543 ($r^2>0.50$, $P<0.001$). Six haplotypes (among 5 SNPs of BUD13/ZNF259) and 7 haplotypes (among 4 SNPs of MLXIPL) with a frequency>1% were identified in the Mulao and Han populations. We combined 17 haplotypes (among 5 SNPs of BUD13/ZNF259) and 13 haplotypes (among 4 SNPs of MLXIPL) with frequencies less than 3% into one group, called "rare_hap". The A-C-G-A-C (among the ZNF259 rs2075290 and rs964184, and BUD13 rs10790162, rs17119975 and rs11556024 SNPs) and C-C-C-C (among the MLXIPL rs799161, rs35332062, rs3812316 and rs13235543 SNPs) haplotypes accounted for over half of the % haplotype of each ethnic group. Significant differences in the frequencies of the A-C-G-A-C and G-G-A-A-C haplotypes between the two ethnic groups were observed ($P<0.01$ for each).
Conclusions: The present study shows that several SNPs in the MLXIPL, BUD13 and ZNF259 are associated with serum lipid parameters in the Guangxi Mulao and Han populations. But the association is different between the two ethnic groups. There may be an ethnic specific association of these SNPs and serum lipid parameters.

GW25-e0567

The relationship between lipid-lowing efficacy, plasma concentrations and safety of short-term simvastatin and atorvastatin therapy with different dosages in Chinese population

Zhang Feng, Huang Rui, Ren Jingyi, Chen Hong
Department of Cardiology, Peking University People's Hospital, Beijing, China

Objectives: We investigated the lipid-lowing efficacy of short-term simvastatin and atorvastatin therapy with different dosages of routine clinical practice, and studied the association of plasma concentrations, lipid-lowing efficacy and safety of simvastatin and atorvastatin in Chinese population.
Methods: 200 in-hospital patients with hypercholesterolemia were enrolled in the randomized controlled study. The patients were treated with daily doses of 20mg simvastatin, 40mg simvastatin, 10mg atorvastatin or 20mg atorvastatin orally each evening. The lipid profiles before and after 1-week treatment, as well as the plasma concentrations in the morning after 1-week treatment, which was 8 hours after last administration of simvastatin or atorvastatin, were assessed. All adverse events of simvastatin and atorvastatin were also recorded.
Results: Simvastatin and atorvastatin at each dose all effectively reduced TC and LDL-c levels from baseline to week 1 ($P<0.001$). Simvastatin 20mg and simvastatin 40mg produced 17.5% and 24.6% reduction in LDL-c, respectively, and atorvastatin 10mg and atorvastatin 20mg produced 19.8% and 21.3% reduction in LDL-c, respectively. However, No differences were seen between different doses of simvastatin or atorvastatin. More patients at high risk in the study and in the 20mg atorvastatin group reached LDL-c target than those at very high risk (71% versus 32.8%, $P<0.001$ for the overall patients; 80% versus 35.7%, $P<0.05$ for 20mg atorvastain group). There was no significant difference in the plasma concentrations between different dosages of simvastatin and atorvastatin. The plasma concentrations in 10mg atorvastatin group were correlated with the percent reduction of LDL-c ($P<0.05$). No relationship was seen between the plasma concentrations and adverse events of simvastatin and atorvastatin.
Conclusions: Simvastatin and atorvastatin at different doses used by routine clinical practice can effectively reduce the TC and LDL-c levels after short-term treatment. Only the association between plasma concentration and lipid-lowering efficacy was seen in atrovastatin 10mg group. No association was observed between the plasma concentrations, efficacy and adverse events of simvastatin and atorvastatin in other groups.

GW25-e1740

Contributing Factors of Weight Regain after Weight Loss in Ahvaz, Iran

Majid Karandish[1], Nayere Esmaeil Kaboli[1], Hamed Tabesh[2]
[1]Nutrition and Metabolic Diseases Research Center, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran, [2]Department of Biostatistics and Epidemiology, Faculty of Public Health, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran

Objectives: Obesity is one of modifiable risk factors of cardiovascular diseases. Weight regain (WR) is very common among patients who lose weight. Physiological, psychological and behavioral factors are known to cause WR. Identifying the factors associated with WR in different populations is important. This study was carried out to identify the contributing factors of WR in Ahvaz, Iran.
Methods: In this case-control study, from clients referred to dietetics offices in Ahvaz, Iran from 2009 onwards, those older than 18 years and with no history of serious diseases such as cardiovascular diseases, diabetes mellitus, liver or kidney diseases and cancer were recruited. Overall 8000 files were investigated. All eligible clients who had lost at least 10 percent of initial weight and at least 6 months after their last appointments were invited to participate in this study. Weight maintainers (WM) were clients who had maintained their latest recorded weight or lower. WR was defined as regaining of at least 10 percent of the latest recorded weight. Seventy nine persons in the WR group were compared with 73 in WM group. Information about weight, age, sex, physical activities, breakfast consumption, specific changes in living conditions (e.g. divorce or death of relatives), hunger and overeating were collected from the file and by interview. Stress and depression were evaluated by DASS-21 questionnaire. Appropriate statistical tests, including Chi square and logistic regression were used for data analyses.
Results: Significant contributing factors of WR were inactive life style (less than 5 minutes walking per day and lack of regular exercise), depression or stress, inappropriate strategies (overeating) in confronting usual life problems, skipping breakfast, unrestraint eating, not to eat regular meals, and excessive hunger. According to multivariate logistic regression test, the significant predicting variables of WR were irregular consumption of meals and excessive hunger.
Conclusions: To prevent weight regain, diet therapy should be accompanied by behavioral, physical activity and psychological modifications.

GW25-e2322

The Relationship Between Serum Lipids and BMI, WC, and WHR in Women in Shijiazhuang

Yang Xiuchun, Liu Fan, Xiao Bing, Lu Jingchao, Li Yue, Wang Mengxiao, Jin Yaqiong
Department of Cardiology, the Second Hospital of Hebei Medical University, Shijiazhuang, China

Objectives: To investigate serum lipid profiles in different age-related segments in women in Shijiazhuang and to evaluate the relationship between the serum lipids and body mass index (BMI), waist circumference (WC), and waist-hip ratio (WHR).
Methods: 1992 women were recruited in this study. Body height, body mass, body mass index (BMI), waist circumference (WC), hip circumference, waist-hip ratio (WHR) and serum lipid levels were measured in the morning after an overnight fast.
Results: The rate of dyslipidemia was increasing with the growing of age. The detection rates of high TC, high LDL-C, high TG and low HDL-C were 36.38%, 25.07%, 40.52% and 5.53%, respectively. There was no significant difference in lipid levels between age-related segments ($P>0.05$). The levels of TC, TG and LDL-C increased with the growing of BMI. The levels of TC, TG and LDL-C were significantly higher in group of obesity than in group of normal BMI (TC: 5.78±0.96 mmol/L vs 5.32±0.91 mmol/L, $P<0.05$; TG: 1.98±0.59 mmol/L vs 1.17±0.38 mmol/L, $P<0.05$; LDL-C: 3.27±0.44 mmol/L vs 2.86±0.57 mmol/L, $P<0.05$). The level of TG was significantly higher in population with abnormal WC and WHR than in population with normal WC and WHR ($P<0.05$).
Conclusions: The rate of dyslipidemia was associated with age in women in Shijiazhuang. The levels of TC, TG and LDL-C was positively correlated with BMI. The level of TG was positively correlated with WC and WHR.

GW25-e2344

Evaluation of apo A I, apo B, apo A I / apo B in the diagnosis of coronary heart disease

Liu Ying
The People's Hospital of Liaoning Province

Objectives: Whether the apo A I, apo B, apo I /apo B is relevant to the coronary atherosclerosis heart disease and Coronary artery lesion severity by statistical analysis, and the three level Coronary is evaluated how close to stenosis disease.
Methods: In January to March 2013, a total of 512 patients underwent coronary angiography according to the results of coronary angiography were divided into A, B,